

## **Of Course Children Are Different: Supporting Innovations in Science to Identify Children's Vulnerability to Environmental Exposures**

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The entire discipline of pediatrics is based on recognizing that children of varying ages and stages of development differ in countless physical, metabolic, behavioral, and cognitive ways. These differences manifest themselves in entirely different disease patterns and patterns of environmental exposures. In recognizing these distinctions, the Office of Children's Health Protection (OCHP) and Office of Research and Development (ORD) are contributing to the knowledge base for pediatric environmental health via several means. This 90-minute panel will feature EPA-supported efforts, which offer the latest insights on current knowledge, ongoing studies, and future directions in this young, specialized field of pediatric environmental health. The moderated session will include the following three presentations:

- 1) Highlights from the premier, comprehensive literature review of pediatric environmental health to be published in the journal, *Pediatrics*, April 2004
- 2) Results from a 5-year growth and development longitudinal cohort study conducted by an EPA/NIEHS Center for Children's Environmental Health and Disease Prevention Research
- 3) The National Children's Study: establishing priority health outcomes and targeting environmental factors

Introduction: (5 minutes)

The overall goal of the panel is to present the scientific progress and evolving innovation associated with conducting pediatric exposure research, health assessment, and interventions, particularly when environmental factors are of concern. For instance, even with decades of study on environmental tobacco smoke (ETS), lead, mercury, and more recently, pesticides, there are still many aspects of children's exposures and health outcomes that are awaiting discovery and translation into clinical, regulatory, or community use. The panel will provide examples of how recent developments in the molecular sciences, social sciences, and technology have enhanced our understandings of children's vulnerabilities to environmental stressors.

Moderator: Nigel Fields, Extramural Program Manager for Human Health and Community Participatory Research, National Center for Environmental Research

Presentation 1: (25 minutes)

Because of increasing awareness of the potentially profound effects of environmental exposures at different childhood ages, the American Academy of Pediatrics Center for Child Health Research, with support from the EPA, has solicited, compiled, and edited papers on what is and is not known about children's changing vulnerability to environmental exposures from many of

the nation's pioneering pediatricians and health scientists, resulting in a supplement to the journal *Pediatrics* that will be published in April, 2004, featuring over 30 papers from more than 40 leading authorities. This presentation will focus upon the key findings reviewed in this supplement, particularly as they relate to exposure and risk characterization and how these measures change over time in relations to a child's development.

Panelist: Michael Weitzman, MD, is Executive Director of the American Academy of Pediatrics Center for Child Health Research. He is also Professor and Associate Chairman of Pediatrics at the University of Rochester School of Medicine and Dentistry.

#### Presentation 2: (25 minutes)

During the past five years, the EPA/NIEHS Centers for Children's Environmental Health and Disease Prevention Research have developed fully coordinated, interdisciplinary research environments that integrate exposure, health, and community-based prevention research to address the health risks to primarily low-income children. This presentation will feature the results of a comprehensive longitudinal pesticide exposure and health assessment project of women and children in a migrant population of rural, agricultural California. The study's lead investigator will characterize the particular exposure and behavior scenarios associated with the birth cohort study population and provide insight on culturally appropriate risk reduction and health promotion strategies.

Panelist: Brenda Eskenazi, PhD, is the Director of the Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS). She is a professor of Maternal and Child Health and Epidemiology at UC Berkeley's School of Public Health.

#### Presentation 3: (20 minutes)

As major contributors to an interagency working group developing the National Children's Study, ORD continues to lead national efforts to understand how children's growth and development may be adversely impacted by toxics in the environment. The Study, scheduled to begin in late 2005, aims to examine the effects of a plethora of environmental influences on the health of more than 100,00 children across the United States, following them from birth until age 21. This presentation will highlight the health outcomes of interest (e.g., asthma, obesity, neurobehavioral outcomes, injuries) and the environmental factors to be studied, including chemical, physical, biological, and social factors, as well as genetic factors and their interactions with the environment.

Panelist: Carole A. Kimmel, PhD, is a senior scientist at EPA's National Center for Environmental Assessment. She is also a staff scientist for the National Children's Study.

#### Moderated Discussion: (15 minutes)

The panel will address questions and comments from the audience pertaining to the following themes: What implications does our understanding of children's exposure and risk have on regulatory or community-level decision making? Where do the environmental and social sciences meet when considering health outcomes? What approaches are most effective at translating complex exposure and environmental health information to affected populations?